



PCT/GB 2004 0 0 2 0 7 0

GB041876



INVESTOR IN PEOPLE

The Patent Office  
Concept House  
Cardiff Road  
Newport  
South Wales  
NP10 8QQ

REC'D 14 JUN 2004

WIPO

PCT

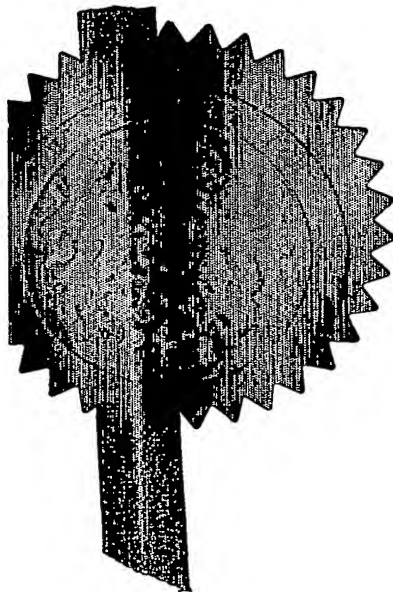
I, the undersigned, being an officer duly authorised in accordance with Section 74(1) and (4) of the Deregulation & Contracting Out Act 1994, to sign and issue certificates on behalf of the Comptroller-General, hereby certify that annexed hereto is a true copy of the documents as originally filed in connection with the patent application identified therein.

In accordance with the Patents (Companies Re-registration) Rules 1982, if a company named in this certificate and any accompanying documents has re-registered under the Companies Act 1980 with the same name as that with which it was registered immediately before re-registration save for the substitution as, or inclusion as, the last part of the name of the words "public limited company" or their equivalents in Welsh, references to the name of the company in this certificate and any accompanying documents shall be treated as references to the name with which it is so re-registered.

In accordance with the rules, the words "public limited company" may be replaced by p.l.c., plc, P.L.C. or PLC.

Re-registration under the Companies Act does not constitute a new legal entity but merely subjects the company to certain additional company law rules.

BEST AVAILABLE COPY



Signed

Dated 3 June 2004

**PRIORITY  
DOCUMENT**

SUBMITTED OR TRANSMITTED IN  
COMPLIANCE WITH RULE 17.1(a) OR (b)

THE PATENT OFFICE

17 MAY 2003



19MAY03 EROB269-1-001559  
POL/7700 0.00-0321377.6

# Request for grant of a patent

(See the notes on the back of this form. You can also get an explanatory leaflet from the Patent Office to help you fill in this form)

The Patent Office

Cardiff Road  
Newport  
South Wales  
NP10 8QQ

1. Your reference

BKCD/RT

2. Patent application number

(The Patent Office will fill in this part)

0311377.6

17 MAY 2003

3. Full name, address and postcode of the or of each applicant (underline all surnames)

Claire CLARE  
8 Bowling Green Avenue  
Cirencester  
Gloucestershire  
GL7 2HB

Patents ADP number (if you know it)

86329 03001

If the applicant is a corporate body, give the country/state of its incorporation

4. Title of the invention

Drinking Vessel

5. Name of your agent (if you have one)

Wynne-Jones, Laine & James

"Address for service" in the United Kingdom to which all correspondence should be sent (including the postcode)

22 Rodney Road  
Cheltenham  
Gloucestershire  
GL50 1JJ

Patents ADP number (if you know it)

1792001

6. If you are declaring priority from one or more earlier patent applications, give the country and the date of filing of the or of each of these earlier applications and (if you know it) the or each application number

Country

Priority application number  
(if you know it)

Date of filing  
(day / month / year)

n/a

7. If this application is divided or otherwise derived from an earlier UK application, give the number and the filing date of the earlier application

Number of earlier application

Date of filing  
(day / month / year)

n/a

8. Is a statement of inventorship and of right to grant of a patent required in support of this request? (Answer 'Yes' if:

NO

- a) any applicant named in part 3 is not an inventor, or
  - b) there is an inventor who is not named as an applicant, or
  - c) any named applicant is a corporate body.
- See note (d))

**Patents Form 1/77**

9. Enter the number of sheets for any of the following items you are filing with this form. Do not count copies of the same document

Continuation sheets of this form	—
Description	4
Claim(s)	—
Abstract	—
Drawing(s)	1

10. If you are also filing any of the following, state how many against each item.

Priority documents	—
Translations of priority documents	—
Statement of inventorship and right to grant of a patent (Patents Form 7/77)	—
Request for preliminary examination and search (Patents Form 9/77)	—
Request for substantive examination (Patents Form 10/77)	—
Any other documents (please specify)	—

11. I/We request the grant of a patent on the basis of this application.

Signature: *Wynne Jones*  
Wynne Jones, Laine & James

Date 16.5.2003

12. Name and daytime telephone number of person to contact in the United Kingdom

Mr BKC Dunlop  
01242-515807

**Warning**

*After an application for a patent has been filed, the Comptroller of the Patent Office will consider whether publication or communication of the invention should be prohibited or restricted under Section 22 of the Patents Act 1977. You will be informed if it is necessary to prohibit or restrict your invention in this way. Furthermore, if you live in the United Kingdom, Section 23 of the Patents Act 1977 stops you from applying for a patent abroad without first getting written permission from the Patent Office unless an application has been filed at least 6 weeks beforehand in the United Kingdom for a patent for the same invention and either no direction prohibiting publication or communication has been given, or any such direction has been revoked.*

**Notes**

- If you need help to fill in this form or you have any questions, please contact the Patent Office on 08459 500505.
- Write your answers in capital letters using black ink or you may type them.
- If there is not enough space for all the relevant details on any part of this form, please continue on a separate sheet of paper and write "see continuation sheet" in the relevant part(s). Any continuation sheet should be attached to this form.
- If you have answered 'Yes' Patents Form 7/77 will need to be filed.
- Once you have filled in the form you must remember to sign and date it.
- For details of the fee and ways to pay please contact the Patent Office.

Drinking Vessel

This invention relates to drinking vessels.

So called "no spill" drinking cups for toddlers, and indeed the very elderly, have been subject to extensive research and many patents. This type of cup has a lid and a drinking spout and some sort of valving arrangement to prevent liquid coming out of the spout when the cup is inverted or knocked over. As children's dexterity increases, they then tend to progress to an ordinary drinking cup or glass and for the most part these are only distinguished by the make of plastics and varying suitable motifs. The elderly also prefer to be able to use an ordinary drinking vessel for as long as possible. Both the young and the elderly often have a problem putting the drinking vessel back down onto a table with the base parallel to the table top. Instead the edge frequently is the first part of the vessel to touch and if the vessel is released at that point, it will usually fall over and spill its contents.

It has been proposed to provide a cup with a weighted base so that the mass in the base tends to pull the vessel back into a vertical position in the manner of the children's weighted toy clown. However, if such cups are to prevent spilling on the first inclination of the cup, the restoring action has to be rapid and this means that the restoring force is often large causing over compensation, which leads to the liquid sloping violently in the vessel and can lead to spillages in that way. Further the action is likely to encourage young children to deliberately tip the vessel.

From a first aspect the present invention consists in the drinking vessel having an outer wall and an inner liquid reservoir with an open mouth, wherein

the outer wall splays outwardly from the mouth to form a base footprint of greater area than the mouth the arrangement being such that a vertical line extending downwardly from the centre of gravity of the vessel lies within the base footprint when the vessel is inclined with the plane of the base footprint at angles of up to about 50 degrees to the horizontal.

It has been found that by having a base footprint of greater area than the mouth and the centre of gravity arranged as defined above, the vessel not only restores itself to its stable position when misplaced at an angle, on its edge, on a table, there is also limited rebound, so that spills are significantly reduced.

Preferably the bottom of the reservoir is flush with the lower edge of the outer wall. This not only maximises the volume that the vessel can contain and increases stability by ensuring that the weight of the liquid adds to the mass adjacent the base footprint, it also increases the sliding friction between the vessel and the surface on which it sits, decreasing the number of accidents that will happen due to the vessel receiving a horizontal force, for example from a flaying arm. The bottom may be patterned to increase the friction.

The reservoir may narrow towards its bottom and, in one arrangement the reservoir and the wall may be constituted by oppositely sensed frusto-cones. The opposite tapering is beneficial, because it enables moulding in a single tool. In a preferred embodiment the vessel is formed as a single integral moulding. The angle between the outer wall and the reservoir may be between 2 and 5 degrees.

The ratio of the area of the mouth to the area of the base may be at least about 3:4.

The vessel may be a cup and may have a handle.

Although angles of up to 50 degrees can conveniently be reached for the angle between the vertical line and the horizontal when the vertical line passes through the base footprint it will be understood that greater angles could be achieved by increasing the area of the base footprint. Equally, for aesthetic reasons, smaller angles may be angles and angles of up to 40 or 45 degrees may provide suitable upper inclinations for certain markets.

From another aspect the invention consists in the drinking vessel having a mouth and the base where the ratio of the area of the mouth to the base is at least about 3:4 and the vessel has an outer divergent wall and an inner liquid reservoir.

Although the invention has been defined above it is to be understood it includes any inventive combination of the features set out above or in the following description.

The invention may be performed in various ways and specific embodiments will now be described, by way of example, with reference to the accompanying drawings, in which:

Figures 1 to 5 are respectfully a side view, an isometric view, a vertical sectional view turned through 90 degrees, a plan view and a view on the arrow A taken on Figure 1.

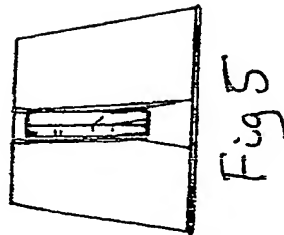
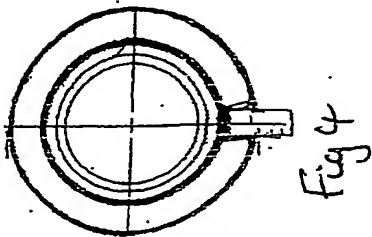
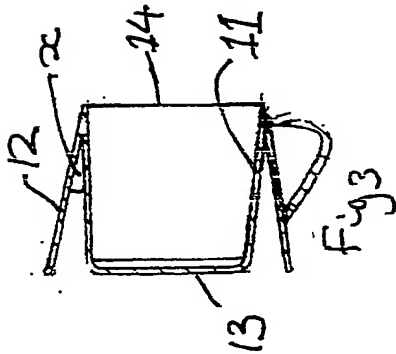
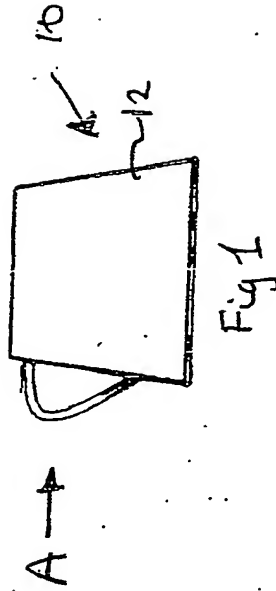
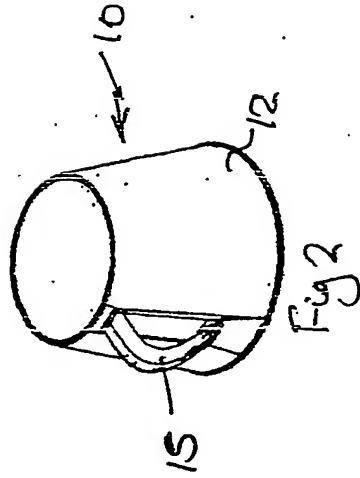
A cup, generally indicated at 10, comprises an inner liquid reservoir 11 and an outer splayed wall 12. The inner reservoir 11 tapers towards its bottom 13 from a mouth 14 a handle 15 is provided, but the design is equally applicable to handleless drinking vessels. The angle  $x$  between the reservoir 11 and wall

12 is about 3 degrees.

It will be understood that the splayed outer wall 12 defines an enlarged base footprint, which not only makes the cup 10 extremely stable against blows to its side wall or handle when it is sitting on a table, it also contributes significantly to the ability of the cup to restore itself to a vertical position from a significantly tilted position. This is because the use of the double wall arrangement in which the reservoir 11 extends downwardly so that the bottom 13 is substantially level with the free edge of the wall 12, means that the centre of gravity of the cup is highly centralised and low within the cup so that a vertical line extending downwardly from the centre of gravity will pass through the base footprint even when the plane of the base footprint is at angles of up about 50 degrees to the horizontal. This means that the cup will restore itself in most situations where the user misplaces it on the table, although it will not prevent deliberate spillage.

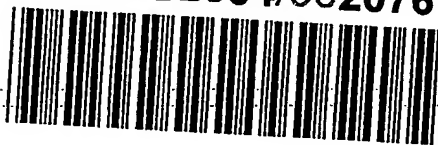
In the current embodiment the ratio of the area of the mouth to the area of the base footprint is about 3:4. If the base footprint is increased, the stability will increase, but aesthetically it is believed that this proportion is about the best compromise between looks and functionality.

1/1





PCT/GB2004/002076



This Page is inserted by IFW Indexing and Scanning  
Operations and is not part of the Official Record

## BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☒ BLACK BORDERS
- ☐ IMAGE CUT OFF AT TOP, BOTTOM OR SIDES
- ☐ FADED TEXT OR DRAWING
- ☒ BLURED OR ILLEGIBLE TEXT OR DRAWING
- ☒ SKEWED/SLANTED IMAGES
- ☐ COLORED OR BLACK AND WHITE PHOTOGRAPHS
- ☐ GRAY SCALE DOCUMENTS
- ☒ LINES OR MARKS ON ORIGINAL DOCUMENT
- ☒ REPERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY
- ☐ OTHER: \_\_\_\_\_

**IMAGES ARE BEST AVAILABLE COPY.**

**As rescanning documents *will not* correct images  
problems checked, please do not report the  
problems to the IFW Image Problem Mailbox**